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NEW DOUBLE STARS.

Systematic search for new double stars has formed a part of my observing programme for the past two years, with the result, so far, of the discovery of 250 pairs not previously known. Two hundred and three of these pairs have been published in *A. N.* 3635 and 3668, and in *Bulletin* No. 3 of the Lick Observatory. Attention has been called to some of the more important pairs of the first two lists in previous numbers of these *Publications*.

The third list, published in Lick Observatory *Bulletin* No. 3, contains 94 pairs, classified with respect to the distance between their components as follows:—

Under	0".25	3
	0.50	23
	1.00	47
	2.00	73
Over	5.00	1

Two of these pairs are formed from the division of the principal component of the known double stars H 846 and Σ 2527.

The measures are:—

A 143.				
R. A. $12^h 10^m 46^s$; Decl. $-7^\circ 26'$.				
A and B (New).				
1901.27	$148^\circ.8$	$1''.00$	$9.2-10.3$	$3''$.
A and C = H 846.				
1901.26	$113^\circ.4$	$13''.02$	$9.2-11.5$	$2''$.

A 159.				
R. A. $19^h 23^m 0^s$; Decl. $+20^\circ 28'$.				
A and B (New).				
1900.65	$335^\circ.0$	$0''.78$	$8.4-11.7$	$3''$.
A and C = Σ 2527.				
1900.61	$18^\circ.3$	$4''.26$	$8.4-9.5$	$1''$.

The two closest pairs in the list are A 162, and A 194, for which I obtain the following results:—

A 162.				
R. A. $19^h 30^m 47^s$; Decl. $+23^\circ 15'$.				
1900.66	$144^\circ.6$	$0''.21$	$8.2-8.2$	$3''$.

A 194.

R. A. $22^h 57^m 28^s$; Decl. $+47^\circ 28'$.1900.94 $97^\circ.7$ $0''.18$ $8.0-8.0$ $4''$.

Three of the pairs discovered since the lists mentioned above were printed consist of additional components to previously known double stars.

Their measures are as follows:—

R. A. $19^h 7^m 43^s$; Decl. $+24^\circ 23'$ (1880.0).*A* and *B* (New).1901.35 $288^\circ.6$ $2''.79$ $8.0-13.5$ $3''$.*A* and *C* = Ho. 446.1901.35 $48^\circ.3$ $5''.32$ $8.0-12.0$ $3''$.*A* and *D* (New).1901.35 $112^\circ.0$ $33''.6$ $8.0-15.5$ $1''$.*D* and *E* (New).1901.35 $118^\circ.8$ $5''.38$ $15.5-16.0$ $1''$.R. A. $20^h 3^m 38^s$; Decl. $+35^\circ 26'$ (1900.0).*A* and *B* = O Σ 398.1901.53 $77^\circ.3$ $0''.96$ $7.7-9.7$ $1''$.*A* and *C* (New).1901.53 $132^\circ.0$ $5''.23$ $7.7-15.0$ $1''$.R. A. $20^h 7^m 25^s$; Decl. $+34^\circ 7'$ (1880.0).*A* and *B* (New).1901.41 $206^\circ.2$ $0''.21$ $7.6-7.8$ $3''$.*AB* and *C* = Ho. 121.1901.40 $17^\circ.0$ $22''.80$ $7.0-11.5$ $2''$.

September 5, 1901.

R. G. AITKEN.

SOME RECENT RESULTS SECURED WITH THE MILLS SPECTROGRAPH.*

The results given below are a few of those recently established by the Mills spectrograph, used in connection with the 36-inch refracting telescope. The majority of the photographs upon which the results depend were made by Assistant Astronomer W. H. WRIGHT, and the remainder by DR. REESE and myself.

June 20, 1901.

W. W. CAMPBELL.

* Reprinted from *Bulletin* No. 4 of the Lick Observatory.